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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/038,686

DATE: 06/10/2002

TIME: 14:51:30

Input Set : A:\10276-067001.TXT

Output Set: N:\CRF3\06102002\J038686.raw

ENTERED

4 <110> APPLICANT: Orban, Tihamer
 7 <120> TITLE OF INVENTION: AUTOANTIGEN VACCINE
 10 <130> FILE REFERENCE: 10276-067001
 12 <140> CURRENT APPLICATION NUMBER: 10/038,686
 C--> 13 <141> CURRENT FILING DATE: 2002-05-31
 15 <150> PRIOR APPLICATION NUMBER: 60/260,068
 16 <151> PRIOR FILING DATE: 2001-01-05
 18 <160> NUMBER OF SEQ ID NOS: 6
 20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 22 <210> SEQ ID NO: 1
 23 <211> LENGTH: 110
 24 <212> TYPE: PRT
 25 <213> ORGANISM: Homo sapiens
 27 <400> SEQUENCE: 1
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 29 1 5 10 15
 30 Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly
 31 20 25 30
 32 Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe
 33 35 40 45
 34 Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly
 35 50 55 60
 36 Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu
 37 65 70 75 80
 38 Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys
 39 85 90 95
 40 Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn
 41 100 105 110
 43 <210> SEQ ID NO: 2
 44 <211> LENGTH: 585
 45 <212> TYPE: PRT
 46 <213> ORGANISM: Homo sapiens
 48 <400> SEQUENCE: 2
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 50 1 5 10 15
 51 Ser Gly Asp Ser Glu Asn Pro Gly Thr Ala Arg Ala Trp Cys Gln Val
 52 20 25 30
 53 Ala Gln Lys Phe Thr Gly Gly Ile Gly Asn Lys Leu Cys Ala Leu Leu
 54 35 40 45
 55 Tyr Gly Asp Ala Glu Lys Pro Ala Glu Ser Gly Gly Ser Gln Pro Pro
 56 50 55 60
 57 Arg Ala Ala Ala Arg Lys Ala Ala Cys Ala Cys Asp Gln Lys Pro Cys
 58 65 70 75 80

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59 Ser Cys Ser Lys Val Asp Val Asn Tyr Ala Phe Leu His Ala Thr Asp
60      85      90      95
61 Leu Leu Pro Ala Cys Asp Gly Glu Arg Pro Thr Leu Ala Phe Leu Gln
62      100      105      110
63 Asp Val Met Asn Ile Leu Leu Gln Tyr Val Val Lys Ser Phe Asp Arg
64      115      120      125
65 Ser Thr Lys Val Ile Asp Phe His Tyr Pro Asn Glu Leu Leu Gln Glu
66      130      135      140
67 Tyr Asn Trp Glu Leu Ala Asp Gln Pro Gln Asn Leu Glu Glu Ile Leu
68 145      150      155      160
69 Met His Cys Gln Thr Thr Leu Lys Tyr Ala Ile Lys Thr Gly His Pro
70      165      170      175
71 Arg Tyr Phe Asn Gln Leu Ser Thr Gly Leu Asp Met Val Gly Leu Ala
72      180      185      190
73 Ala Asp Trp Leu Thr Ser Thr Ala Asn Thr Asn Met Phe Thr Tyr Glu
74      195      200      205
75 Ile Ala Pro Val Phe Val Leu Leu Glu Tyr Val Thr Leu Lys Lys Met
76      210      215      220
77 Arg Glu Ile Ile Gly Trp Pro Gly Gly Ser Gly Asp Gly Ile Phe Ser
78 225      230      235      240
79 Pro Gly Gly Ala Ile Ser Asn Met Tyr Ala Met Met Ile Ala Arg Phe
80      245      250      255
81 Lys Met Phe Pro Glu Val Lys Glu Lys Gly Met Ala Ala Leu Pro Arg
82      260      265      270
83 Leu Ile Ala Phe Thr Ser Glu His Ser His Phe Ser Leu Lys Lys Gly
84      275      280      285
85 Ala Ala Ala Leu Gly Ile Gly Thr Asp Ser Val Ile Leu Ile Lys Cys
86      290      295      300
87 Asp Glu Arg Gly Lys Met Ile Pro Ser Asp Leu Glu Arg Arg Ile Leu
88 305      310      315      320
89 Glu Ala Lys Gln Lys Gly Phe Val Pro Phe Leu Val Ser Ala Thr Ala
90      325      330      335
91 Gly Thr Thr Val Tyr Gly Ala Phe Asp Pro Leu Leu Ala Val Ala Asp
92      340      345      350
93 Ile Cys Lys Lys Tyr Lys Ile Trp Met His Val Asp Ala Ala Trp Gly
94      355      360      365
95 Gly Gly Leu Leu Met Ser Arg Lys His Lys Trp Lys Leu Ser Gly Val
96      370      375      380
97 Glu Arg Ala Asn Ser Val Thr Trp Asn Pro His Lys Met Met Gly Val
98 385      390      395      400
99 Pro Leu Gln Cys Ser Ala Leu Leu Val Arg Glu Glu Gly Leu Met Gln
100      405      410      415
101 Asn Cys Asn Gln Met His Ala Ser Tyr Leu Phe Gln Gln Asp Lys His
102      420      425      430
103 Tyr Asp Leu Ser Tyr Asp Thr Gly Asp Lys Ala Leu Gln Cys Gly Arg
104      435      440      445
105 His Val Asp Val Phe Lys Leu Trp Leu Met Trp Arg Ala Lys Gly Thr
106      450      455      460
107 Thr Gly Phe Glu Ala His Val Asp Lys Cys Leu Glu Leu Ala Glu Tyr

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Output Set: N:\CRF3\06102002\J038686.raw

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108 465          470          475          480
109 Leu Tyr Asn Ile Ile Lys Asn Arg Glu Gly Tyr Glu Met Val Phe Asp
110          485          490          495
111 Gly Lys Pro Gln His Thr Asn Val Cys Phe Trp Tyr Ile Pro Pro Ser
112          500          505          510
113 Leu Arg Thr Leu Glu Asp Asn Glu Arg Met Ser Arg Leu Ser Lys
114          515          520          525
115 Val Ala Pro Val Ile Lys Ala Arg Met Met Glu Tyr Gly Thr Thr Met
116          530          535          540
117 Val Ser Tyr Gln Pro Leu Gly Asp Lys Val Asn Phe Phe Arg Met Val
118 545          550          555          560
119 Ile Ser Asn Pro Ala Ala Thr His Gln Asp Ile Asp Phe Leu Ile Glu
120          565          570          575
121 Glu Ile Glu Arg Leu Gly Gln Asp Leu
122          580          585
124 <210> SEQ ID NO: 3
125 <211> LENGTH: 979
126 <212> TYPE: PRT
127 <213> ORGANISM: Homo sapiens
129 <400> SEQUENCE: 3
130 Met Arg Arg Pro Arg Arg Pro Gly Gly Leu Gly Gly Ser Gly Gly Leu
131 1          5          10          15
132 Arg Leu Leu Leu Cys Leu Leu Leu Leu Ser Ser Arg Pro Gly Gly Cys
133          20          25          30
134 Ser Ala Val Ser Ala His Gly Cys Leu Phe Asp Arg Arg Leu Cys Ser
135          35          40          45
136 His Leu Glu Val Cys Ile Gln Asp Gly Leu Phe Gly Gln Cys Gln Val
137          50          55          60
138 Gly Val Gly Gln Ala Arg Pro Leu Leu Gln Val Thr Ser Pro Val Leu
139 65          70          75          80
140 Gln Arg Leu Gln Gly Val Leu Arg Gln Leu Met Ser Gln Gly Leu Ser
141          85          90          95
142 Trp His Asp Asp Leu Thr Gln Tyr Val Ile Ser Gln Glu Met Glu Arg
143          100          105          110
144 Ile Pro Arg Leu Arg Pro Pro Glu Pro Arg Pro Arg Asp Arg Ser Gly
145          115          120          125
146 Leu Ala Pro Lys Arg Pro Gly Pro Ala Gly Glu Leu Leu Gln Asp
147          130          135          140
148 Ile Pro Thr Gly Ser Ala Pro Ala Ala Gln His Arg Leu Pro Gln Pro
149 145          150          155          160
150 Pro Val Gly Lys Gly Gly Ala Gly Ala Ser Ser Ser Leu Ser Pro Leu
151          165          170          175
152 Gln Ala Glu Leu Leu Pro Pro Leu Leu Glu His Leu Leu Leu Pro Pro
153          180          185          190
154 Gln Pro Pro His Pro Ser Leu Ser Tyr Glu Pro Ala Leu Leu Gln Pro
155          195          200          205
156 Tyr Leu Phe His Gln Phe Gly Ser Arg Asp Gly Ser Arg Val Ser Glu
157          210          215          220
158 Gly Ser Pro Gly Met Val Ser Val Gly Pro Leu Pro Lys Ala Glu Ala

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Output Set: N:\CRF3\06102002\J038686.raw

```

159 225          230          235          240
160 Pro Ala Leu Phe Ser Arg Thr Ala Ser Lys Gly Ile Phe Gly Asp His
161          245          250          255
162 Pro Gly His Ser Tyr Gly Asp Leu Pro Gly Pro Ser Pro Ala Gln Leu
163          260          265          270
164 Phe Gln Asp Ser Gly Leu Leu Tyr Leu Ala Gln Glu Leu Pro Ala Pro
165          275          280          285
166 Ser Arg Ala Arg Val Pro Arg Leu Pro Glu Gln Gly Ser Ser Ser Arg
167          290          295          300
168 Ala Glu Asp Ser Pro Glu Gly Tyr Glu Lys Glu Gly Leu Gly Asp Arg
169 305          310          315          320
170 Gly Glu Lys Pro Ala Ser Pro Ala Val Gln Pro Asp Ala Ala Leu Gln
171          325          330          335
172 Arg Leu Ala Ala Val Leu Ala Gly Tyr Gly Val Glu Leu Arg Gln Leu
173          340          345          350
174 Thr Pro Glu Gln Leu Ser Thr Leu Leu Thr Leu Leu Gln Leu Leu Pro
175          355          360          365
176 Lys Gly Ala Gly Arg Asn Pro Gly Gly Val Val Asn Val Gly Ala Asp
177          370          375          380
178 Ile Lys Lys Thr Met Glu Gly Pro Val Glu Gly Arg Asp Thr Ala Glu
179 385          390          395          400
180 Leu Pro Ala Arg Thr Ser Pro Met Pro Gly His Pro Thr Ala Ser Pro
181          405          410          415
182 Thr Ser Ser Glu Val Gln Gln Val Pro Ser Pro Val Ser Ser Glu Pro
183          420          425          430
184 Pro Lys Ala Ala Arg Pro Pro Val Thr Pro Val Leu Leu Glu Lys Lys
185          435          440          445
186 Ser Pro Leu Gly Gln Ser Gln Pro Thr Val Ala Gly Gln Pro Ser Ala
187          450          455          460
188 Arg Pro Ala Ala Glu Glu Tyr Gly Tyr Ile Val Thr Asp Gln Lys Pro
189 465          470          475          480
190 Leu Ser Leu Ala Ala Gly Val Lys Leu Leu Glu Ile Leu Ala Glu His
191          485          490          495
192 Val His Met Ser Ser Gly Ser Phe Ile Asn Ile Ser Val Val Gly Pro
193          500          505          510
194 Ala Leu Thr Phe Arg Ile Arg His Asn Glu Gln Asn Leu Ser Leu Ala
195          515          520          525
196 Asp Val Thr Gln Gln Ala Gly Leu Val Lys Ser Glu Leu Glu Ala Gln
197          530          535          540
198 Thr Gly Leu Gln Ile Leu Gln Thr Gly Val Gly Gln Arg Glu Glu Ala
199 545          550          555          560
200 Ala Ala Val Leu Pro Gln Thr Ala His Ser Thr Ser Pro Met Arg Ser
201          565          570          575
202 Val Leu Leu Thr Leu Val Ala Leu Ala Gly Val Ala Gly Leu Leu Val
203          580          585          590
204 Ala Leu Ala Val Ala Leu Cys Val Arg Gln His Ala Arg Gln Gln Asp
205          595          600          605
206 Lys Glu Arg Leu Ala Ala Leu Gly Pro Glu Gly Ala His Gly Asp Thr
207          610          615          620

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```

208 Thr Phe Glu Tyr Gln Asp Leu Cys Arg Gln His Met Ala Thr Lys Ser
209 625          630          635          640
210 Leu Phe Asn Arg Ala Glu Gly Pro Pro Glu Pro Ser Arg Val Ser Ser
211          645          650          655
212 Val Ser Ser Gln Phe Ser Asp Ala Ala Gln Ala Ser Pro Ser Ser His
213          660          665          670
214 Ser Ser Thr Pro Ser Trp Cys Glu Pro Ala Gln Ala Asn Met Asp
215          675          680          685
216 Ile Ser Thr Gly His Met Ile Leu Ala Tyr Met Glu Asp His Leu Arg
217          690          695          700
218 Asn Arg Asp Arg Leu Ala Lys Glu Trp Gln Ala Leu Cys Ala Tyr Gln
219 705          710          715          720
220 Ala Glu Pro Asn Thr Cys Ala Thr Ala Gln Gly Glu Gly Asn Ile Lys
221          725          730          735
222 Lys Asn Arg His Pro Asp Phe Leu Pro Tyr Asp His Ala Arg Ile Lys
223          740          745          750
224 Leu Lys Val Glu Ser Ser Pro Ser Arg Ser Asp Tyr Ile Asn Ala Ser
225          755          760          765
226 Pro Ile Ile Glu His Asp Pro Arg Met Pro Ala Tyr Ile Ala Thr Gln
227          770          775          780
228 Gly Pro Leu Ser His Thr Ile Ala Asp Phe Trp Gln Met Val Trp Glu
229 785          790          795          800
230 Ser Gly Cys Thr Val Ile Val Met Leu Thr Pro Leu Val Glu Asp Gly
231          805          810          815
232 Val Lys Gln Cys Asp Arg Tyr Trp Pro Asp Glu Gly Ala Ser Leu Tyr
233          820          825          830
234 His Val Tyr Glu Val Asn Leu Val Ser Glu His Ile Trp Cys Glu Asp
235          835          840          845
236 Phe Leu Val Arg Ser Phe Tyr Leu Lys Asn Val Gln Thr Gln Glu Thr
237          850          855          860
238 Arg Thr Leu Thr Gln Phe His Phe Leu Ser Trp Pro Ala Glu Gly Thr
239 865          870          875          880
240 Pro Ala Ser Thr Arg Pro Leu Leu Asp Phe Arg Arg Lys Val Asn Lys
241          885          890          895
242 Cys Tyr Arg Gly Arg Ser Cys Pro Ile Ile Val His Cys Ser Asp Gly
243          900          905          910
244 Ala Gly Arg Thr Gly Thr Tyr Ile Leu Ile Asp Met Val Leu Asn Arg
245          915          920          925
246 Met Ala Lys Gly Val Lys Glu Ile Asp Ile Ala Ala Thr Leu Glu His
247          930          935          940
248 Val Arg Asp Gln Arg Pro Gly Leu Val Arg Ser Lys Asp Gln Phe Glu
249 945          950          955          960
250 Phe Ala Leu Thr Ala Val Ala Glu Glu Val Asn Ala Ile Leu Lys Ala
251          965          970          975
252 Leu Pro Gln
255 <210> SEQ ID NO: 4
256 <211> LENGTH: 622
257 <212> TYPE: PRT
258 <213> ORGANISM: Homo sapiens

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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/038,686

DATE: 06/10/2002

TIME: 14:51:31

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L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date